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PROGRESS REPORT

of the

FARMER COOPERATIVE SERVICE

This progress report includes a summary of the current research of Farmer Cooperative Service and a preliminary report of progress made during the preceding year. It is primarily a tool for use of scientists and administrators in program coordination, development and evaluation; and for use of advisory committees in program review and development of recommendations for future research programs.

The summaries of progress on USDA and cooperative research include some tentative results that have not been tested sufficiently to justify general release. Such findings, when adequately confirmed, will be released promptly through established channels. Because of this, the report is not intended for publication and should not be referred to in literature citations. Copies are distributed only to members of Department staff, advisory committee members and others having a special interest in the development of public agricultural research programs.

This report also includes a list of publications reporting results of USDA and cooperative research issued between July 1, 1967 and June 30, 1968. Current agricultural research findings are also published in the monthly USDA publication, News for Farmer Cooperatives. This progress report was compiled in the Farmer Cooperative Service, U.S. Department of Agriculture, Washington, D.C.

UNITED STATES DEPARTMENT OF AGRICULTURE

Washington, D.C.

July 1, 1968

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## INTRODUCTION

Farmer Cooperative Service helps farmers and other rural Americans live better by using cooperatives more effectively. It conducts research, provides technical assistance, and performs educational work to help farmers and rural residents improve the organization, operation, and management of their cooperatives. The Service has three programs -- Specialized Cooperative Research, Cooperative Marketing and Farm Supplies, and Cooperative Development.

Research is performed primarily in the three research divisions of the Specialized Cooperative Research Program. The Cooperative Marketing and Farm Supplies Program conducts a limited amount of research on cooperative marketing and farm supplies.

The research divisions are:

Business Organization. This division is concerned with internal cooperative problems such as financing, member relations, organizational structure, and pricing and payment practices. It does research on how to best organize and operate cooperatives to generate the strength needed for effective operation in today's and tomorrow's environment.

Cooperative Appraisal. This division deals with the amount and kind of cooperative services available to rural people, problems of improving cooperative's operating efficiency, the effectiveness of cooperatives in the marketplace, the level that cooperatives operate in the marketing system, and the degree of integration and diversification that brings best results.

New Services. This division helps cooperatives identify new needs and services -- required by rural people -- that arise from a rapidly changing economy. It also seeks to identify product and service innovations that will help cooperatives improve their marketing effectiveness and members' income.

This report describes the Service's research program but does not cover technical assistance that is not of a research character or any educational activity.

The Service cooperates with other agencies of the Department, other Federal and State organizations, land-grant universities, and farmer cooperatives in conducting research on problems of mutual interest. The Service conducts some research under contract or cooperative agreement with other public and private organizations. Also, it participates in planning, reviewing, and at times, executing regional research conducted by land-grant universities.

Some recent examples of research with cooperatives follow:

Merger Objectives. Pre-merger objectives were studied for a group of merged farmer cooperatives and the extent to which these objectives were achieved. Most mergers involve one relatively weak and a strong cooperative. The strong cooperative is the acquiring cooperative. The results achieved by the acquiring cooperative are influenced by the weak cooperative. The findings of the study are based upon this general condition rather than by cooperatives with a specifically formulated growth policy.

Principal findings are:

- . Mergers among cooperatives are increasing and account for a larger portion of individual cooperative growth.
- . Economy of size is the major motivation to merge and acquire. However, many acquiring cooperatives did not achieve this objective because of declining agricultural production in their area. Further, the acquired cooperative often had a high cost structure that impaired overall efficiency.
- . Cooperatives that merged to attain market or bargaining power failed to do so. However, those that merged to improve member services, diversify plant operations, obtain facilities or reduce competition achieved these objectives.
- . Local cooperatives using external growth (growing through mergers) expanded faster than local cooperatives growing internally. In contrast, regional cooperatives using external growth expanded more slowly than regional cooperatives growing internally.
- . Most cooperative mergers are instigated by acquired cooperatives rather than acquiring associations.

Two policy implications emerged from this study involving firm merger planning and antitrust legislation.

- . Cooperatives generally plan mergers poorly. Much more post-merger evaluation as well as pre-merger planning is necessary if cooperatives are to achieve their major objectives.
- . Little need exists for antitrust legislation against cooperative mergers, whether they acquire cooperatives or noncooperatives. Most of the acquired and acquiring cooperatives are small firms by most measures of firm size.



Further Processing. Research to improve farm income through further processing is receiving more attention. An in-depth study of the potential for fruit and vegetable processing cooperatives to purchase or manufacture containers showed that if half the fruit and vegetable processing cooperatives pooled their orders for containers, they could save as much as 7 percent of container costs -- some \$6 million a year. Even greater savings appear possible by manufacturing metal cans -- assuming that enough cooperatives joined together to insure adequate volume. Fabricating and printing cardboard containers for shipping canned goods could save cooperatives 5 to 10 percent of present cost for these items.

A related study of the potentials for savings in procuring containers for fresh fruits and vegetables showed that if half the cooperatives using such containers would consolidate their purchases, they could save about 10 percent of present costs -- about \$3 million a year. Another 5 percent might be saved if these cooperatives jointly fabricated and printed their own containers.

Grain. Studies were completed to improve cooperative grain marketing facilities and practices in two areas of western Kentucky. Findings showed that grain farmers need seven new or expanded grain handling and storage facilities and several smaller grain loading stations. These new and expanded facilities should increase grain farmers' income by about \$2 million a year.

Cotton. A study of the feasibility of central ginning shows that by using high-density gin bale presses, central gins could reduce total costs compared to conventional ginning costs for compression, storage, and associated services by about 50 cents a bale when pallets are used and seed cotton is stored inside. Where outside storage of seed cotton is practical, storage costs would be reduced by an additional \$1 a bale. This is in addition to the \$5-\$7 savings per bale that could be realized by having a central ginning system rather than the present local gins.



AREA NO. 1: EFFICIENCY IN THE MARKETING SYSTEM

USDA and Cooperative Program

Location of Intramural Work	Scientist man-years FY 1968				
	Research problem area				Total
	502	504	509	510	
Washington, D.C.	0.0	1.1	19.5	5.9	26.5
Total	<u>1/</u> 0.0	1.1	19.5	5.9	26.5

Intramural program is supplemented by extramural support representing 1.5 SMY's at State Agricultural Experiment Stations. 2/

1/ Extramural research with funds obligated in prior year.

2/ RPA 509 - 0.5; RPA 510 - 1.0.

### Problems and Objectives

Cooperatives have become broader in scope and diversified in activities. No longer do most of them handle only one commodity or supply one service. Problems inherent in cooperative growth and diversification are organization, financing, and management. Companion problems include searching out new types of cooperatives and new services to meet the changing needs of rural America, improving cooperative structures so as to increase efficiency and inject a higher level of competition into the marketing system, and improving the economic power of farmers through cooperatives as a means of insuring equitable terms of sale for individual farmers.

Major objectives of this cooperative research are to develop and evaluate alternative ways to:

- . Achieve more efficient organizational and financial structures for more effective diversified operations.
- . Insure more effective member participation and control.
- . Improve effectiveness and identify opportunities for providing additional marketing functions.
- . Add, modify, or develop different service-type activities and identify product innovations that will help improve effectiveness.
- . Achieve for farmers, through their cooperatives, economic strength in bringing about terms of trade more favorable to them than those prevailing or that would prevail otherwise.

### Progress - USDA and Cooperative Program

#### RPA 502 - DEVELOPMENT OF MARKETS AND MORE EFFICIENT MARKETING OF TIMBER PRODUCTS

Forestry. Preliminary findings of a feasibility study on various forest-based activities and enterprises in West Virginia indicate that those concerned with developing such activities and enterprises in that State should consider that:

- . Most woodland owners favor participating in a forestry association.
- . Persons owning between 75 and 250 acres of woodland favored participation more than those owning smaller or larger tracts.
- . Most owners were over 50 years of age.

- . More than half the owners had less than an eight-grade education.
- . Low levels of education and income may pose some difficulties for timber resource development.

This work is being conducted under contract by West Virginia University.

#### RPA 504 - PHYSICAL AND ECONOMIC EFFICIENCY IN MARKETING FIELD CROPS

Cotton. A study was initiated to develop guidelines for achieving greater efficiency in cooperative cotton processing and marketing.

Preliminary observations indicate that serious financial problems exist in many cooperative gins because of low volume and high labor and depreciation cost per bale. This suggests the need to consolidate many gin associations and concentrate the ginning volume in fewer gins. Substantial resistance to consolidations exists, however, largely because of community pride.

Central Ginning. A feasibility study of central ginning shows that by using high-density gin bale presses, central gins could reduce total costs compared with conventional ginning costs for compression, storage and associated services by about 50 cents a bale when pallets are used and seed cotton is stored inside. This, despite a 25 cent higher cost a bale for analyzing seed cotton compared to the cost of classing conventional samples. Where outside storage of seed cotton is practical, storage costs would be reduced by an additional \$1 a bale. These reductions in cost are in addition to the \$5-\$7 a bale savings that could be made by central ginning rather than the present local ginning system.

Grain. A report was published giving the who, when, and what of claim filing for grain losses in rail shipments. This publication was prepared because earlier research findings showed that every local co-op elevator had some grain losses in its rail shipments but only 48 percent of the managers of these locals filed claims with carriers.

#### RPA 509 - MARKETING FIRM AND SYSTEM EFFICIENCY

##### A. Cooperative sales, services, distribution, and pricing practices

Citrus. A study was initiated to determine whether trends exist in selected specification requirements of retail and wholesale buyers and the extent these trends apply to all specifications and kinds of citrus fruit. Fresh shipments from Florida Interior area for the 1958-59, 1961-62 and 1966-67 seasons were evaluated. Preliminary findings indicate:

- . No significant, consistent change occurred in size of lot, number of lots, fruit sizes, varieties, and types of containers in truckloads shipped to retail and wholesale buyers.

- . Truck shipments to retailers contained fewer and larger lots than shipments to wholesale buyers.
- . Truck shipments to retailers contained fewer sizes of fruit per load than shipments to wholesalers.
- . Shipments to retail buyers contained fewer sizes but about the same number of varieties and types of containers per load than shipments to wholesalers.

Cottonseed. Cooperative cottonseed mills crushed 26 percent of the total U.S. crush in 1966-67 compares with 22 percent for the previous season. Net sales returns to members averaged \$75.88 a ton -- \$15.33 higher than the preceding year. Volume of crush was down and operating costs up \$2.92 a ton. The increased returns to members was due to higher prices for all cottonseed products.

Differential Pricing. Work continued on a study of differential pricing of feed and fertilizer by regional and local farm supply cooperatives.

Of the 16 regional associations studies, seven granted their retail outlets quantity discounts on large individual feed transactions, and four granted volume discounts on annual feed purchases above a specified minimum. Eight regionals granted price adjustments when necessary to meet competition.

The price differentials granted on fertilizer transactions were even more diverse. Only one regional granted a quantity discount on large individual fertilizer transactions, and five granted a volume discount on annual fertilizer purchases above a certain minimum. However, 13 -- all but three -- regional associations granted their retail outlets price adjustments when necessary to meet competition.

All local outlets granted their patrons a discount on specified types of feed and fertilizer transactions.

Frozen Food Provisioning. Work continued on a study to evaluate differences in operation, performance, and growth between frozen food locker cooperatives with and those without slaughter facilities. Comparisons are being made of 10 plants with and 10 plants without slaughter facilities over a 7-year period, 1960-66.

Tentative findings show that most large plants with slaughter facilities continue to serve predominantly farm families on a custom basis. They provided custom services to members at lower rates in 1966 than in 1960 and yet realized a larger margin from their total operations. Compared with large plants without slaughter facilities, they achieved a higher level of labor productivity, a higher and more uniform demand for lockers, and they increased total output at a faster rate.



Large plants without slaughter facilities experienced a shift in patronage from farm to nonfarm families. In adjusting to this shift they promoted sales of meat and other foods while retaining most of their custom service business. They also maintained closer control over labor costs than large plants with slaughter facilities.

Both groups have successfully met their business objectives, but both can improve their productivity and operational efficiency.

Grain. Elevator design and size, type of equipment, and operating practices that will increase efficiency in cooperative grain marketing is under study in Ohio.

Oilseeds. Work continues on a study to identify and evaluate accomplishments, operating practices, problems, and outlook for cooperative cottonseed and soybean oil mills.

Regional Grain Cooperatives. Storage capacity for 23 regional grain co-ops has increased from 35.5 million bushels at the end of World War II to 298 million bushels by harvest time in 1968. Volume in 1966-67 was 980 million bushels, down from 1,030 million bushels the previous year but still the second highest on record. Net margins were off substantially -- the lowest since 1944-45.

These co-ops have grown rapidly, are in sound financial condition, and operated efficiently and effectively.

Transportation -- Motortruck Cost Control System. A report was issued describing methods and procedures for maintaining effective cost control of truck fleets. The report describes an effective organization structure, duties and responsibilities of personnel, maintenance cost control procedures, information on preventive maintenance, and suggested records, forms, and reports for use in controlled truck operating costs.

Transportation -- Equipment Operated by Farmer Cooperatives. In January 1967, farmer cooperatives owned or leased 37,000 motortrucks, 5,251 railcars, 49 barges, 1,485 miles of pipeline, and four ships. Most trucks and barges were owned; most rail cars were leased.

An analysis of the ownership and use of the 37,000 motortrucks showed:

- . Dairy cooperatives operated about a third of the trucks owned or leased.
- . Only 12 percent of cooperatives' trucks were truck tractors; the remainder were straight trucks.

- . Twenty-four percent of the cooperatives operating trucks had trailers or semitrailers with more than half of these cooperatives operating only one or two units.
- . Of the straight trucks, 64 percent had gross vehicle weights of 8,000 to 25,999 pounds.
- . Average number of trucks per cooperative increased as the dollar volume of business increased.
- . Only 15 percent of the total cooperatives' truck mileage was in interstate commerce. Less than one-fourth of the cooperatives operating trucks had any trips in interstate commerce.
- . Cooperatives backhauling in interstate travel reported backhauling on only 21 percent of their interstate trips. Of these backhauls, 89 percent involved the cooperative's own or members' goods, 8.5 percent exempt agricultural commodities, and 2.5 percent all other goods.

Transportation -- Joint Use of Equipment. A study of 9 grain marketing and 8 farm supply cooperatives in the Midwest showed that sufficient movement of both grain and fertilizer existed to justify joint use of hopper cars and barges. These cooperatives owned 50 covered hopper cars and 35 barges, and leased 201 covered hopper cars. The grain cooperatives shipped about 525 million bushels of grain in 1965 and the supply co-ops 10.5 million tons of fertilizer, feed, and petroleum products.

Southbound tonnage of grain from the cooperatives in the central United States during a 14-month period totaled 2,400 bargeloads and 82 carloads, but future tonnage may be much greater with the opening of a new cooperative export elevator in Louisiana. The supply co-ops received 9,100 rail carloads of phosphate fertilizer from Florida into 16 Central States.

Possible advantages of coordinated transportation include better utilization of equipment, some savings, and greater opportunity for small cooperatives to lease or own transportation equipment.

#### B. Cooperative trends and potentials

Alfalfa Dehydration. Work continues on a study to determine conditions necessary for establishing successful alfalfa dehydrating plants, evaluate the experience of cooperative and other dehydrating operations, and develop guidelines for successful dehydrating operation by cooperatives.

A study of 20 dehydrating plants (including both cooperative and proprietary) is nearing completion. In addition, records of a number of cooperative dehydrating plants that discontinued operations are being studied to determine causes of failure.



Preliminary observations indicate:

- . Successful alfalfa dehydrating operations depend heavily on a favorable location and prudent management.
- . Location, percentage of plant capacity used, and size of plant greatly influenced production costs.
- . Cooperative and proprietary plants have had similar mortality rates.
- . Managers of cooperative alfalfa dehydrating plants must have considerable skill in supervising production and maintenance and repair, and have a good knowledge of markets.

Part of this work is being performed under contract by Montana State University.

Cooperative Volume and Membership. Total business volume of marketing, farm supply, and related service cooperatives in 1965-66 continued its upward trend. Number of cooperatives and memberships continued to decrease slowly.

Gross volume of business, including interassociation business, was \$20.6 billion -- up 5 percent over the previous year. After adjusting the gross figure for business done between cooperatives, total net business was \$15.6 billion. This was an increase of 6 percent over the net for 1964-65 and 60 percent over the net for 1955-56.

The total number of farmer cooperatives was 8,329. This was a decrease of 254 associations, or almost 3 percent, from the 8,583 cooperatives in the previous year. For several years, mergers, consolidations, and acquisitions have had an important influence on the downward trend in total number of cooperatives. These reorganizations were made largely to improve operations and expand services to meet the changing needs of farmer patrons.

Total number of memberships in farmer cooperatives decreased from 7.1 million in 1964-65 to 6.8 million in 1965-66 -- a decline of 3.6 percent. The steadily declining number of farmers in the United States is primarily responsible for the continuing downward trend in cooperative memberships.

Cooperative Business Size. A study on trends in cooperative business size showed that 32 percent of the farmer cooperatives had business volumes of \$1 million or more in 1965-66, compared with about 27 percent in 1961-62. A little over 3 percent of the cooperatives had business volumes of \$10 million or more in 1965-66, compared with 2.6 percent in 1961-62. Sixty-six cooperatives, less than 1 percent of the total, had business volumes

of \$50 million or more in 1965-66. Among the marketing cooperatives, almost 42 percent reported volumes in excess of \$1 million. In 1961-62, less than 36 percent of the marketing associations had business volumes this large. Almost 18 percent of the farm supply cooperatives reported volumes of \$1 million or more in 1965-66, compared with fewer than 15 percent in 1961-62.

None of the related service cooperatives -- those that primarily perform drying, ginning, grinding, storage, trucking, and other services related to marketing farm products or handling farm supplies -- reported business volumes of as much as \$1 million in either 1961-62 or 1965-66.

Containers - Fresh Fruits and Vegetables. A study on procuring containers for fresh fruits and vegetables on a cooperative basis showed that savings of about 10 percent, or \$3 million a year, appear possible if half the cooperatives would consolidate their purchases.

Containers and other packaging supply costs were 43 percent to total packing costs for fruit and 39 percent for vegetables. Such costs were 10.5 percent of the sales value of the fresh products.

Savings up to 10 percent may be realized from volume discounts, brokerage allowances, or negotiated prices for consolidated purchases. Five percent might be saved in fabricating and printing paperboard containers, but a more important advantage may be the assurance of a supply of high-quality containers. Savings of 10 to 14 percent may be available by producing burlap and paper bags; this was the experience of the one cooperative that produced these items in this country.

Most opportunities exist in cooperative purchasing on a brokerage basis. This can be undertaken by groups of small cooperatives with small staffs, and little capital.

Containers - Processed Fruits and Vegetables. A related study was completed on the current status and potential for cooperatives to purchase or manufacture containers for processed fruits and vegetables. The study, covering 76 cooperative packers or about 75 percent of all such U.S. organizations, showed that if half the processing cooperatives pooled their orders for containers, they could save as much as 7 percent of container costs, or some \$6 million a year. Even greater savings appear possible by manufacturing metal cans, if enough cooperatives joined together to insure adequate volume. And fabricating and printing cardboard containers for shipping canned goods could save cooperatives 5 to 10 percent of present cost for these items.

Metal cans accounted for 68 percent of total container expenditures; corrugated cardboard cases (including cannery cases), 19 percent; glass containers, 7 percent; and other types, 6 percent.

Cooperatives bought 92 percent of their containers directly from manufacturers.

Various forms of quantity and cash discounts, brokerage allowances, and warehouse allowances were available to half the cooperatives reporting; 5 percent was the most common rate for quantity discount.

Container costs were 36 percent of total processing costs and 22 percent of the sales value of the processed products. Over 100 cooperative processors buy about \$160 million worth of containers and other packaging supplies each year.

Fruits and Vegetables. A study appraising the trends and current status of fruit and vegetable marketing, processing, and bargaining cooperatives was completed. It included co-ops that sell their products on the fresh market or to processors, process these products, or bargain. Those that sell to the fresh market or to processors declined 30 percent between 1952 and 1964 and increased their sales 40 percent. Those that process declined 10 percent and increased their sales 175 percent. They packed 21 percent of all U.S. processed fruit and vegetables in 1964. Cooperative's that bargain grew slowly and the value of the products bargained for was valued at only one-fourth the value of the sales of either the co-ops that sell or process.

Livestock. Livestock production has become increasingly important in the Southeast in the last 20 years. A study was undertaken to determine the scope of present cooperative livestock marketing activities in this area. This study will provide a foundation for additional research into the effective use livestock cooperatives in the future.

Poultry. Work is nearly complete on a study to determine the feasibility of establishing cooperative marketing facilities to market fowl in the Northeast.

Rural Credit Unions. Work continued on a study to determine the extent that credit unions have promoted thrift and savings and provided credit in low income rural areas, the extent various socioeconomic groups use credit unions, and to develop guidelines to assist credit unions to operate more successfully in low income rural areas.

Vegetables. A study with the University of Tennessee was completed to determine the potential for statewide marketing of vegetables cooperatively. Findings indicate a need for a cooperative marketing association as vegetable growers' attitudes are favorable and sufficient volume is available.

C. Cooperative organization, finance, management, and member relations

Capital Structure. A study of the capital structure of farmer cooperatives was completed. The 8,522 U.S. marketing and farm supply cooperatives had a combined business volume in 1962 of \$17 billion. Combined assets amounted to over \$5.3 billion. Current assets accounted for 48 percent of this total, fixed assets 37 percent, and other capital, 15 percent.

Combined net worth of the 8,522 cooperatives in 1962 exceeded \$3.2 billion -- over 60 percent of total assets. Current liabilities amounted to 28 percent of total assets, and term liabilities 12 percent. The \$3.2 billion equity capital represents a gross figure. When intercooperative investments of about \$500 million are eliminated, net investments of farmers in their marketing and farm supply cooperatives in 1962 amounted to \$2.7 billion.

Combined borrowed capital of the 8,522 cooperatives outstanding at the close of fiscal year 1962 amounted to \$1.03 billion. Banks for cooperatives supplied about 58 percent of this, individuals, 19 percent; and commercial banks, 10 percent.

Savings of \$532 million were reported by the 7,317 cooperatives that realized net savings for the year. Of this amount, 86 percent was distributed as patronage refunds on the current year's business, 7 percent was used to pay dividends and interest on equity capital, and 4 percent was retained as unallocated reserves. The remaining 3 percent was for Federal and State income taxes.

Dairy. Two feasibility studies were completed on unifying operations of cooperatives. Both studies showed specific ways to substantially reduce operating costs by reducing the number of plants engaged in the various operations: Milk receiving, separating, manufacturing, and fluid processing and packaging. Development of new equipment and operating methods, higher labor rates, improved roads and truck equipment, and other changes add to the need for fewer plants.

Equitability of Patronage Refund Distribution. A study of 107 marketing regionals indicated that payment of patronage refunds is the most widely-used method of distributing savings among members and other patrons. Of the 107 regionals providing data in 1966, 75 reported year-end savings; 16, losses; while of the remaining 16, 15 used pooling procedures and one broke even.

FCS classified into 10 different methods, ways the 75 marketing regionals distributed \$38 million of net margins or savings. Seven of these methods accounted for nearly 90 percent of the \$38 million. Patronage refunds was the major element in these seven methods; the other three methods did not use refunds.



Equitability of the 10 methods used in distributing net margins was evaluated by comparing each one with this equity measure: all savings above cost are refunded on a current patronage basis. Three-fourths of the regionals refunded 100 percent of their savings on a business volume basis. The other one-fourth did not do as well. Although 6 distributed between 92 and 94 percent, 12 made no distribution.

Thus findings indicate that a major segment of farmer cooperatives adhere to the primary cooperative principle of services at cost. The distribution methods they employ to accomplish the nonprofit objective, usually grade high in equitability.

These regionals used five different methods of calculating refunds; (1) Total business, (2) departmental, (3) divisional, (4) parent-subsidary, and (5) combination of methods. The total business method was used by 63 percent of the regionals for computing refunds. This method calls for the calculation of refunds based upon a single refund rate. The departmental method of calculating refunds was used by 21 percent of the associations, with the refund rate computed for each department based on its net savings and patronage.

Only 9 percent of the cooperatives used patronage within a major function or division -- such as marketing products or selling farm supplies -- as the base for determining average unit savings above cost. In each case, the cooperatives performed two major functions with no further dividing into departments because: (1) Only one or similar kinds of products or services were included in the function, and (2) the volume of patronage in the function was too small to justify the cost of departmentalizing it.

The parent-subsidary arrangement for computing average unit savings was used by only one regional. The parent cooperative controlled and coordinated four major functions performed by four subsidiaries. In refunding net savings to individual farmers, the parent cooperative computed rates of refund by major function, returning a subsidiary's savings to patrons using that service. Six percent of the cooperatives used a combination of these above methods.

The 107 regionals reported on the amount of cash and noncash refunded annually from 1961-65. During these 5 years, 78 of the 107 paid refunds. Forty-five of the regionals paid patronage refunds annually for each of the 5 years. Eleven missed only 1 year; 9 missed 2 years; 6 missed 3 years; and 7 cooperatives made only 1 payment during the 5 years. Altogether, the 78 marketing regionals made 315 yearly payments out of a possible 382. The resulting score of 82 percent indicates a fairly high degree of consistency in payment of annual refunds.

Total patronage refunds paid annually by the 78 regionals from 1961 through 1965 fluctuated between \$30 million and \$35 million. The overall trend in total dollar volume of refunds distributed over the 5 years was up.

Altogether, total savings returned to patrons as patronage refunds during the 5 years amounted to \$164 million. Thirty-eight percent of the refunds were paid in cash and 62 percent in noncash form.

Grain. Two studies were completed, in cooperation with the University of Kentucky, to develop guidelines and recommendations for improving grain marketing facilities and practices in two areas of western Kentucky.

The study showed the need for seven new or expanded cooperative grain handling and storage facilities and several smaller grain loading stations to better serve grain producers. These new and expanded facilities should increase grain producers' income by about \$2 million annually.

A similar study is underway in a third area of western Kentucky.

The annual analysis of 23 regional grain cooperatives showed that these cooperatives continue to expand their services. Mergers and new facilities have paved the way for greatly increased efficiency.

Management. Work was initiated to determine the characteristics of successful managers in cooperatives handling fertilizer and develop measuring devices that will help evaluate the characteristics found to have high predictive value. This work is being performed under cooperative agreement by Iowa State University.

Rice. A study conducted in cooperation with the land grant colleges of Arkansas, Louisiana, and Texas of the southern rice industry was completed. Major findings suggest that the industry should:

- . Cooperatively strengthen its market position through integrating processing and marketing functions.
- . Develop a strong unified sales organization that can efficiently export a large volume of rice.
- . Explore potentials for developing closer working arrangements between driers and mills that would result in better control over movement of rice from the driers to the mills.
- . Explore possibilities of bulk shipments of more rice in covered hopper cars to gain lower rail rates, even though transit privileges and other fringe benefits may be lost.
- . Commingle rice of similar quality to increase operating efficiency and improve use of storage facilities.
- . Consider integrating rice handling and marketing with one or more complementary crops such as soybeans.

Soybeans. A study is underway to determine the most desirable location for a terminal elevator and soybean processing plant to serve farmers in western Tennessee.

Another study is underway to determine the feasibility of locating a soybean processing plant to serve a group of integrated poultry producers in North Carolina.

#### RPA 510 - FARMER BARGAINING POWER

Attitudes Towards Cooperatives. A study was completed that evaluated the differences in attitudes toward cooperatives between farmers under 40 and those 40 and over. Attitudes were virtually identical except that those under 40 were less favorably inclined toward public policy affecting cooperatives. Sources of cooperative information were similar for both groups. Over 96 percent of both groups patronized one or more cooperatives.

Bargaining. Dairymen are increasingly coordinating their marketing activities. Methods include mergers, formation of new federations and sales agencies, and developing new pooling approaches.

Work was initiated under contract with Purdue University to determine the impact of two major midwestern regional milk bargaining cooperatives on milk prices, supply, and demand.

Work also continues on bargaining methods in fruits and vegetables.

Farmers Mutual Insurance. A study is underway to develop information and guidelines for farmers' mutual fire insurance companies that are considering merging or consolidating into larger operating units to meet growing insurance needs of their members.

During the past decade more than 200 farmers' mutual fire insurance companies have been involved in some form of unification. About 50 larger, more effective, and better managed companies have evolved. These provide a ready source of information on factors leading to unification, methods and procedures used in bringing about unification, and benefits to members resulting from unification.

Fertilizer. Two studies were largely completed on the present status, trends, conditions for entry into the nitrogen and phosphate fertilizer industries, and their implications to farmer cooperatives. Substantial decline in prices of nitrogen and other fertilizers in the spring of 1968 required a complete reevaluation of the study findings and the impact of these price changes on the outlook for consumption, operating margins, and plant payouts.

The University of Nebraska is doing this work under a cooperative agreement.

Fruits and Vegetables. Findings on coordinated marketing programs of selected fruit and vegetable cooperatives indicate that grower organizations involved in developing an integrated production-marketing system should:

- . Give the sales manager final authority for all decisions.
- . Establish and adhere to a uniform quality control program from the farm level to the finished product.
- . Strive for a program which includes a combination of association and buyer labels.
- . Consider cooperatively owning trucks for shipping produce to nearby markets.
- . Appraise members' interest in and possible support of a coordinated program to purchase production and marketing supplies.
- . Develop a centralized accounting system and supply members with periodic statements.
- . Have regular membership meetings and issue a periodical newsletter to assure better understanding between members and management.

A study to determine the potential of fruit and vegetable cooperatives on the Coastal Plains of North Carolina continues under a cooperative agreement with the North Carolina Agricultural and Technical State University.

Mergers of Artificial Breeding Cooperatives. Two artificial breeding cooperatives, each formed by merging local associations, are being studied to determine the member's participation in past mergers and their attitude toward additional proposed mergers.

Personal interviews with over 600 members showed a high degree of satisfaction with the two existing cooperatives. Farmer members recognized the need for and the benefits derived from previous mergers.

Some members however did oppose further mergers. Opposition came from those who believed "bigness" in itself is undesirable and from others who believed that fees would be increased, members would lose control, and there would be little improvement in services. This opposition arose in spite of the strong belief by the leadership group that further mergers were feasible from a technical and economic point of view.



The study also indicates that the members had confidence in the information provided by technicians. In effect, the study emphasizes that economics, technical feasibility, and confidence in information point toward mergers. The unique problem of merging members in a cooperative however, are so great that special efforts to achieve a merger are needed. The core problem is to identify the mutuality of interest and to utilize communication media to obtain a favorable attitude toward mergers.

Mergers of Farm Supply Cooperatives. A study of four mergers involving eight farm supply cooperatives shows that two mergers have been successful and two have not -- 2 to 4 years after merging. The two showing progress involved a large, strong cooperative and a smaller, weaker cooperative handling the same types of farm supplies. In one case, after 2 years, one's sales were up 25 percent and net worth was up 8 percent although net savings were down slightly. In the other, almost 4 years after merging, sales were up 50 percent, net worth was up 33 percent, and net margins were double those of the two cooperatives the last year they operated separately.

The two unsuccessful mergers involved a large feed and supply cooperative with a smaller petroleum co-op, and a large farm supply cooperative with a small farm-urban petroleum co-op. In one case, sales 4½ years later have never equaled the total sales of the two original cooperatives and net losses have occurred the last 2 years. The other merger made progress the first 2 years, but experienced a heavy loss in the third year, due to lack of internal control. Both expanded facilities substantially.

In all four mergers, net savings per dollar of sales in the first year in the unified association were not as large as those of the stronger cooperative the last year it operated independently.

Findings indicate that problems of managing a larger association often are encountered, and that combining volume, assets, and other resources does not immediately guarantee improved results or always justify new expanded facilities.

Merger Objectives. A study was completed to determine pre-merger objectives of merged farmer cooperatives; the extent to which these objectives were achieved; factors, operative in both successful and unsuccessful mergers, that were instrumental in the success or lack of success in achieving pre-merger objectives; the amount of cooperative growth attributable to external growth; and the future role of merger in the growth of agricultural cooperatives.

The term merger is used to include unifications that technically may be acquisitions or consolidations. Mergers most frequently involve a strong and a weak cooperative. Findings from this study may not apply to that relatively limited group of mergers where an overall growth strategy has been the goal.

Principal findings were:

- . Mergers among cooperatives are increasing and account for a larger portion of cooperative growth.
- . The number of noncooperatives acquired by cooperatives has decreased in recent years, partly because of changes in the cooperative tax law and recent antitrust decisions.
- . Economy of size is the major motivation to firm growth through merger and acquisition. However, many acquiring cooperative did not achieve this objective because of declining agricultural production in their area. Also, only some of the acquiring cooperatives were able to reduce their average or unit cost 2 years after merger and only a few could reduce their average costs 5 to 12 years after merger.
- . Cooperatives that merged to attain market or bargaining power did not achieve their objective. However, those that merged to improve member services, diversify plant operations, obtain facilities to reduce competition did achieve these objectives.
- . Local cooperatives using external growth expanded faster than local cooperatives growing internally.
- . In contrast, regional cooperatives using external growth expanded more slowly than regional cooperatives using internal growth.
- . Most of the cooperative mergers are instigated by acquired cooperatives rather than acquiring associations. Thus, for those cooperatives having financial difficulty merger appears to be a method to exit from the industry. It further emphasizes that an overall growth strategy was not involved.
- . Mergers generally occur when stock prices (expectations) are high and when farm income is higher rather than during depressed periods of economic activity in agriculture.

Two policy implications emerged from the study involving firm merger planning and antitrust legislation:

- . Cooperatives generally plan mergers poorly. Much more post-merger evaluation as well as pre-merger planning is necessary if cooperatives are to achieve their major objectives.
- . Little need exists for antitrust legislation against cooperative mergers whether they acquire cooperatives or noncooperatives. Most of the acquired and acquiring cooperatives are small firms by most measures of firm size.

Oregon State University made the study under a cooperative agreement.

Potatoes. Analysis of the role of cooperatives in the market structure of the Idaho potato industry was completed. Findings indicate that a cooperative potato marketing enterprise handled 11 percent of the production of Eastern Idaho in 1964, exerting an important influence on competing marketing firms. Grower-members received a higher return per hundredweight than the average price paid growers in Idaho.

Need continues for expanding the role of cooperative Idaho potato marketing to further insure growers' returns through improved services and greater bargaining power.

Similar analyses of cooperatives in Maine, Colorado and Florida are underway.

A related study to determine changes in the market organization and practices for potatoes produced in the Hastings area of Florida continues under contract by the University of Florida.

#### Publications - USDA and Cooperative Program

##### RPA 502 - DEVELOPMENT OF MARKETS AND MORE EFFICIENT MARKETING OF TIMBER PRODUCTS

Hulse, F. E. and Knox, R. L. 1967. Forestry Co-ops Surveyed at Workshops. News for Farmer Cooperatives (Dec.).

##### RPA 504 - PHYSICAL AND ECONOMIC EFFICIENCY IN MARKETING FIELD CROPS

Miller, G. F. 1968. Filing Rail Grain Loss Claims. FCS Information 61.

##### RPA 509 - MARKETING FIRM AND SYSTEM EFFICIENCY

#### A. Cooperative sales, services, distribution, and pricing practices

Camp, T. H. and Holroyd, W. M. 1968. Motortruck Operations of Farmer Cooperatives as of January 1, 1967 (Interim Report). FCS Service Report 92.

Camp, T. H. and Holroyd, W. M. 1968. Motortrucks Operated by Farmer Cooperatives -- Number, Types, and Operating Characteristics, January 1, 1967. FCS Research Report 2.

Camp, T. H. and Kriebel, W. R. 1968. Controlling Motortruck Operating Costs of Farmer Cooperatives. FCS Information 58.

Davidson, D. R. 1967. Distribution of Surplus by United States Cooperatives. Year Book of Agricultural Co-operation, 1967. Edited by the Plunkett Foundation for Cooperative Studies. London, W. C. 1.

Miller, G. F. 1967. Possibilities for Cooperatives Jointly Operating Rail Hopper Cars and Barges. FCS Service Report 89.

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Meyer, C. H. 1968. Cooperatives in the Fruit and Vegetable Industry. FCS Service Report 93.

Meyer, C. H. 1967. Improving Fruit and Vegetable Co-op Marketing. News for Farmer Cooperatives (Dec.).

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Traylor, H. D., Price, G., and Markeson, C. B. 1967. Costs of Drying and Storing Rough Rice in Louisiana and Texas. Marketing Research Report 799.

C. Cooperative organization, finance, management, and member relations

Parsons, R. P. 1968. Can-Do Management Gives Pace Setting Growth. News for Farmer Cooperatives (May).

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Thurston, S. K., Callahan, S. and Miller, G. F. 1968. The Need for Additional Grain Facilities in the Lower Green River Area of Kentucky. FCS Service Report 90.

Thurston, S. K. and Callahan, S. 1968. Grain Facility Needs in the Pennyroyal Area of Kentucky. FCS Service Report 94.

Ullman, W. K. 1967. Norbest's Tender Time in Time for Thanksgiving. News for Farmer Cooperatives (Nov.).

RPA 510 - FARMER BARGAINING POWER

Hummer, P. D. and Hallber, M. C. 1968. Cooperative Mergers Should Emphasize  
A Merging of Members. Pennsylvania State University Farm Economics (Sept.).

AREA NO. 2: IMPROVING INCOME OPPORTUNITIES IN RURAL COMMUNITIES  
(RPA 907)

USDA and Cooperative Program

Location of Intramural Work	Scientist man-years FY 1968
Washington, D.C.	1.2
Total	1.2

Intramural program is supplemented by extramural support representing 0.4 SMY's at State Agricultural Experiment Stations.



## Problems and Objectives

Rural residents need income opportunities to have an adequate standard of living, to finance and maintain suitable public and private facilities and services and to keep their children in the areas rather than force them to migrate to cities.

Accelerated economic development of low income rural areas also vitally concerns large urban centers unequipped to assimilate large numbers of unskilled rural migrants.

Low income farmers often lack adequate size farm units, working capital, and equipment to produce a good income. Frequently, they must depend on off-farm work to supplement their incomes. Such opportunities often are not available -- at least within reasonable distances from their homes.

Major objectives of the research are to develop and evaluate alternative ways to:

- . Determine the operating characteristics of successful rural cooperatives involved in overall rural development.
- . Determine new rural services contributing to overall economic development that can be met through cooperative action.
- . Determine how cooperatives contribute to improved income, community services, and rural welfare.
- . Evaluate factors influencing the willingness of low-income people to participate in cooperatives.

## Progress - USDA and Cooperative Program

### RPA 907 - IMPROVED INCOME OPPORTUNITIES IN RURAL COMMUNITIES

Adjusting Cooperatives To Current Conditions. A study was initiated to assess wants and needs of rural residents for goods and services provided by cooperatives, evaluate communication methods of informing patrons and learning their needs, and appraise impediments to providing such goods and services. The study is being conducted under cooperative agreement by Virginia Polytechnic Institute.

Factors Affecting Buying Decisions. A study is underway in two West Virginia counties to determine the factors affecting buying decisions of low income rural residents and the degree to which cooperatives meet the needs of these people.

Preliminary observations indicate:

- . Considerable importance of noneconomic factors such as convenience, friendships, and attitudes in selecting the source of supply.
- . Lack of knowledge that a supply cooperative operates in the county even though business had actually been done with the cooperative.
- . A generally favorable attitude toward the cooperatives serving the two counties, but pointed criticism from large farm operators.
- . A relatively large number of supply sources serving each county with the 20 supply items considered.

Helping Rural People Use Cooperatives More Effectively. A study is underway in Mississippi to develop methods to help rural people understand and use cooperatives more effectively. Preliminary findings show that 16 percent of the respondents had attended a cooperative's annual meeting, 5 percent had been a director, and 82 percent patronized one or more cooperatives -- 34 percent as members and 48 percent as nonmember patrons.

Twenty-one percent of farmers less than 45 years old were farming over 500 acres, while only 9 percent of farmers over 45 were farming over 500 acres. This work is being conducted under cooperative agreement by Mississippi State University.

Publications - USDA and Cooperative Program

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